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Abstract
Fault tolerance analysis is very important on interconnection network. In tradition, we use the connectivity of node and edge to measure the fault tolerance capability of interconnection networks. In this paper, we introduce the concept of the forbidden faulty sets that was proposed by Esfahanian. Under the restriction of forbidden faulty sets, we analyze the fault tolerance capability of the recursive circulant graphs. The recursive circulant graph has many good topology properties such as Hamiltonian cycle, node symmetric and can be recursively constructed. Finally, we will prove the connectivity of the recursive circulant with the restriction of forbidden faulty sets. The connectivity can achieve $4m - 4$ if $c = 1$ and $d = 2$; $4m - 2$ if $c = 1$ and $d \neq 2$; $4m$ if $c = 2$; $4m + 2$ if $c > 2$.
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